The Accounting and Economic Effects of Currency Translation Standards: AASB 1012 vs. AASB 121

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This paper1 empirically examines the accounting and the economic effects of foreign exchange rate fluctuations on the oil and gas industry under the former and the current translation accounting standards in Australia. Due to the unique features of the oil and gas industry and based on an analysis of the former standard—Australian Accounting Standards Board (AASB) 1012, the authors predict that a positive translation adjustment (the accounting effect) is associated with a loss, instead of a creation of the firm value (the economic effect) under AASB 1012. The authors also predict that the new standard AASB 121, adapted from the International Accounting Standard (IAS) 21 with modifications, will report translation adjustments that are consistent with the economic effects. By using Australia-based multinational oil and gas firms, the authors find that translation adjustments under AASB 1012 are inversely associated with firm value and that the relationship changes to a positive one under AASB 121. This study concludes that the new standard has the potential to improve the quality of the translation accounting information.

Keywords: foreign currency translation, translation gain/loss, value relevance, oil and gas industry

Introduction

The translation of foreign currencies into the reporting currencies involves two types: translation of foreign currency transactions arising from international trade (export and import) and translation of foreign currency financial statements of foreign operations for the purpose of preparing consolidated financial statements. While the translation of foreign currency transactions causes little concern, there have been major controversies in the past few decades on the translation of foreign currency financial statements (e.g., Collins & Salatka, 1993; B. Soo & L. Soo, 1994; Huang, 1992; Louis, 2003; Pinto, 2005). The controversies are centered on the appropriateness of the different translation methods prescribed by accounting standards, and more specifically, on the treatment of the resulting translation adjustment in the consolidated financial statements. Under the floating exchange rate regime, exchange rate changes can result in large amount of translation adjustments (Eiteman, Stonehill, & Moffett, 2000). The translation adjustment can be a positive (credit) amount (a deemed translation gain) or a negative (debit) amount (a deemed translation loss), depending on the net exposure position (net asset or net liability exposure) of the foreign operation, which is determined by the

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1 JEL classification: G21; G12; H25; G14.
translation method used and how the exchange rate changes (Beaver & Wolfson, 1984). How the translation adjustment should be disposed of in the consolidated financial statements, as a component of net income in the income statement or as a balancing amount appearing in owners’ equity in the balance sheet which bypasses the income statement, is an issue of concern. Furthermore, how the translation adjustment is associated with the value of the reporting entity (in other words, how the accounting effect of translation is related to the economic effect of exchange rate changes) is another issue of concern. The importance of the issue is: Does the foreign currency translation adjustment provide information that is consistent with the economic reality? Is a positive (negative) translation adjustment necessarily associated with an increase (a decrease) in the firm value?

In the United States, the accounting standards governing the practice of currency translation have evolved over the years. In 1975, the Financial Accounting Standards Board (FASB) issued its first translation accounting standard, Statement of Financial Accounting Standards (SFAS) No. 8—accounting for the translation of foreign currency transactions and foreign currency financial statements, following the adoption of the floating exchange rate regime. SFAS No. 8 stipulated the use of the temporal rate method and the comprehensive income concept in treating the translation adjustment, that is, the inclusion of translation adjustment in the determination of the consolidated net income\(^2\). SFAS No. 8 was severely criticized, especially by corporate executives, for treating the currency translation gain or loss as a component of the consolidated net income (Bartov, 1997; Huang, 1992; Louis, 2003; Selling & Sorter, 1983). In 1981, the FASB responded by issuing SFAS No. 52—accounting for foreign currency translation, which replaced SFAS No. 8. SFAS No. 52 prescribes the use of the current rate method and the exclusion of translation adjustments from income, when a foreign subsidiary uses a foreign currency as its functional currency\(^3\). The temporal method is still required by SFAS No. 52 in the case, where the US dollar is deemed as the functional currency of the subsidiary in the case, where the subsidiary is located in a hyperinflationary economy. The decision as to which currency is the functional currency rests with the company management.

In Australia, the accounting standards governing translation practice have also changed over the years. Prior to 2005, AASB 1012—foreign currency translation came into effect and took an approach similar to SFAS No. 52. AASB 1012 required a decision to be made on the nature of a foreign subsidiary, either integrated or self-sustaining. Where a foreign subsidiary is of an integrated nature (e.g., the US dollar as the subsidiary’s functional currency), the temporal method should be used for the re-measurement of the foreign currency denominated financial statements and where a foreign subsidiary is of a self-sustaining nature (e.g., the subsidiary’s local currency as the functional currency), the current rate method should be used for the translation of the foreign currency financial statements. Australia started implementing a new translation accounting standard in 2005, AASB 121—the effects of changes in foreign exchange rates, which superseded AASB 1012. AASB 121 is modeled after the IAS 21—the effects of changes in foreign exchange rates and takes a different approach from that of AASB 1012. First of all, AASB 121 requires an entity (a subsidiary) to identify its functional currency in accordance with the guidelines set in the standard. Then, the financial results and the financial position of the subsidiary should be translated into the currency, in which the reporting entity (parent company) presents its financial statements. Under AASB 121, reporting entities can select one or more presentation currencies. The translation method prescribed is the one that is similar to the current rate method.

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\(^2\) Please refer to Louis (2003) for a detailed description of the temporal rate method.

\(^3\) Please refer to Louis (2003) for a detailed description of the current rate method.
with differences in the translation of equity. In contrast to prior accounting rules, AASB 121 does not specify
the rate, at which equity items should be translated and the name of the separate equity account, under which all
translation adjustments should be reported\(^4\).

Unlike the translation gain or loss of foreign currency transactions, which has cash flow effects, the
translation adjustments arising from translating foreign currency financial statements have no cash flow effects
and are of “paper gain” or “paper loss” nature (Bartov, 1997; B. Soo & L. Soo, 1994; Huang, 1992; Pinto, 2005;
Pringle & Connolly, 1991). However, the treatment of the translation adjustments in the consolidated financial
statements affects the consolidated results (either the net income or the net book value), depending on the
translation method used. Under the temporal method, the adjustments are included in the income statement as
a component of net income, which affects the earnings assessment by the market. Eiteman, Stonehill, and Moffett
(2000) noted that many investors tended to use earnings when valuing the firm, either by estimates of expected
cash flows from previous earnings or by applying a price-earnings (P/E) ratio to derive the value per share.
Under the current rate method, translation adjustments are taken straight to the equity section of the balance
sheet, bypassing the income statement. Although the net income is not affected, the net book value of the
consolidated entity includes the effects of currency fluctuations, as all assets and liabilities of a foreign
subsidiary are deemed to be exposed to exchange rate changes under the current rate method.

Prior researches have been concerned with the relationship between the translation adjustments derived
from the accounting translation process and the value of firm. Considering one objective of SFAS No. 52, as
stated by the FASB is “to provide information that is generally compatible with the economic effects of a rate
change” (FASB, 1981, par. 4), a positive association should be expected. In other words, a positive (negative)
translation adjustment, either as a component of the net income under the temporal method or as a part of the
net book value under the current rate method, is expected to be related to an increase (a decrease) in the firm
value. However, evidence from prior researches suggests the opposite, that is, an inverse relationship between
the foreign translation adjustment and the change in firm value (Louis, 2003). Taking the accounting process
generating the translation adjustment as a given, Louis (2003) analyzed the adjustment in view of generally
accepted economic theories and compared the accounting effects and the economic effects of currency
fluctuations. Louis’ (2003) analysis leads to the conclusion that “depreciation of a local currency entails: (1) a
negative translation adjustment (the accounting effect) and (2) an increase in the value of a foreign operation
empirically tested this relationship and found that “a positive translation adjustment is associated with a loss of
value instead of a creation of value” (p. 1027). This result stems from the fact that the accounting rules
governing foreign currency translations generally produce results opposite to the economic effects of exchange
rate changes (Louis, 2003)\(^5\). Pinto (2005), by taking American multinational firms that had manufacturing
operations in Mexico as samples, analyzed the economic effect of a weakening currency on the foreign
operation and concluded that “a depreciating currency would actually be beneficial to the overall operations

\(^4\) However, any translation differences arising from the re-measurement of the local currency to the functional currency should be
recognized in the profit and loss account, if the changes in exchange rates have an effect on the present and future cash flows from
operations.

\(^5\) Please refer to Louis (2003) for a detailed analysis of the effects of exchange rate changes (appreciation and depreciation of
foreign currency) on the economic value of a foreign operation expressed in the US dollar. Please also refer to Aggarwal (1981),
Corbo (1985), Condon, Corbo, and De Melo (1990), and Mazumdar (1993) for a similar analysis and conclusion, as quoted in
since it reduces the overall cost of doing business even further” (p. 115).

This study is concerned with the relationship between the accounting and the economic effects of foreign exchange fluctuations under the former translation accounting standard (AASB 1012) and the current translation accounting standard (AASB 121) in Australia. In particular, the study examines how foreign translation adjustments (positive or negative) resulted from the accounting process are related to the economic value of firm (increase, decrease, or no effect) under the two accounting standards and if the relationship changes between the two standards.

The authors examine the abovementioned relationships by using a sample of Australian multinational firms from the oil and gas industry, which is chosen based on the fact that it exhibits unique economic characteristics, and as a result, the industry is more likely to be affected by foreign exchange exposure and to demonstrate the difference between the accounting and the economic effects of foreign exchange fluctuations.

By using a group of Australian multinational firms from the oil and gas sub-industry in the manufacturing sector, the authors empirically test the association between foreign translation adjustments from the accounting process and the stock price of firms as a proxy for the firm value for two periods of time: one under the former accounting standard AASB 1012 and the other under the current accounting standard AASB 121. The authors find that foreign translation adjustments are negatively associated with the firm value under AASB 1012 and positively associated with the firm value under AASB 121. The result is possibly due to the fact that the new standard AASB 121 provides firms with more flexibility in translation accounting practice and thus has the potential to improve the quality of the translation accounting information.

The remainder of this paper is organized as follows. Section 2 provides an analysis of the accounting and the economic effects of foreign currency fluctuations for the oil and gas industry. Section 3 discusses the sample selection and methodology. Section 4 presents the empirical results and section 5 provides the concluding remarks.

**An Analysis of the Accounting and Economic Effects of Foreign Exchange Rate Fluctuations on the Oil and Gas Industry**

The oil and gas industry plays a key role in the world economy. The industry covers a range of activities including exploration, evaluation, development, production, and sales. The high degree of risks, substantial pre-production costs, export and import, the inelastic price demand, and the worldwide selling prices denominated in the US dollar are some of the unique economic characteristics of this industry (Collins, Rozeff, & Dhaliwal, 1981; Heshelow, 2008). Furthermore, the risk and cost structure of the industry differs significantly from other sectors in an economy. In general, the oil and gas production subsidiaries are located in areas where the extractive and processing operations of the raw materials take place, whereas the refining and marketing activities occur in the industrialized nations (Heshelow, 2008). For this reason, the foreign operations of oil and gas firms are likely to incur pre-production and production costs in countries where subsidiary companies are located, but the revenue is generated in countries where the parent companies reside (Giovannini, Grasso, Lanza, & Manera, 2006; Haushalter, 2000).

For Australian oil and gas firms, the sales are usually settled in Australian dollar or the US dollar, whereas the production costs are incurred in local currencies of foreign subsidiaries. As the production costs and sales revenues of the oil and gas firms are typically incurred in different currencies and the selling prices of the oil
and gas products are determined worldwide, the performance of these firms (and hence, the market value) is significantly affected by the exchange rate changes and the accounting method used to translate the foreign currency denominated financial statements.

From an economic viewpoint, fluctuations in exchange rates affect the value of a foreign subsidiary primarily due to the effects of exchange rates on the pre-production and production costs of foreign oil and gas operations that are expressed in Australian dollars (or the US dollars). When the local currency depreciates (appreciates), these production costs are likely to fall (rise). On the other hand, the selling prices of the oil and gas products are denominated in the US dollar, and thus, the revenue is not affected by the exchange rate fluctuations. As a result, the depreciation (appreciation) of the local currency leads to an increase (a decrease) in the profit of the reporting entity, giving rise to an increase (a decrease) in the firm value.

However, from the accounting viewpoint, the depreciation (appreciation) of the local currency results in a decrease (an increase) in the translated book value of net assets and a negative (positive) foreign translation adjustment under the current rate method, suggesting a decrease (an increase) in the firm value. The accounting argument for a positive association between foreign translation adjustments and the firm value focuses on the assets alone, without regard to the role of these assets in the production process (Louis, 2003).

The AASB 1012 allows the use of the current rate method for a self-sustaining foreign subsidiary and the temporal method for an integrated foreign subsidiary. Under the current rate method, the translation adjustment is taken directly to the equity section of the balance sheet; under the temporal method, the adjustment is treated as the gain or loss entering the determination of the net income; and under both translation methods, a positive relationship is assumed between the translation adjustment (in the form of the translated book value of net assets under the current rate method or the translated net income under the temporal method) and the firm value.

The AASB 121 adopts a new approach to the translation of foreign currency financial statements. It applies the functional and presentation currency concepts. Under AASB 121, each entity is permitted to present its financial reports in any currency (or currencies) that it chooses, and a foreign operation with its functional currency the same as the presentation currency no longer requires translation. In addition, the AASB 121 does not specify the exchange rate, at which the equity items should be translated and the name of the separate equity account, under which all translation adjustments should be reported. The AASB 121 emphasizes that the currency an entity uses in measuring items in its financial statements should be selected to provide information about the entity that is useful and that reflects the economic substance of the underlying events and circumstances relevant to that entity. By adopting new concepts and a new approach, AASB 121 provides firms with flexibility in their decisions on how they can measure and present foreign operations more effectively. As a consequence, AASB 121 has the potential to generate and report the accounting effect of foreign currency translation that is consistent with the economic effect, which will improve the quality of the translation accounting information.

In this research, the authors attempt to answer the following questions:

(1) Is a positive (negative) translation adjustment associated with a decrease (an increase) in the firm value under the former translation standard AASB 1012?

(2) Has the relationship between the translation adjustment and the firm value changed to a positive one under the new standard AASB 121?
Sample Selection and Methodology

Sample Selection

The sample used for the empirical test is the Australia-based multinational oil and gas firms, which form the oil and gas sub-industry, within the manufacturing sector. As discussed previously, the unique economic characteristics of the oil and gas industry give rise to its unique cost and revenue structure and make the industry more exposed to exchange rate risks. As a consequence, the accounting and the economic effects of exchange rate fluctuations for the industry are likely to be more observable. Furthermore, there are advantages for concentrating on a single industry for the empirical test. Focusing on a single industry enables a cross-sectional analysis examining the effects of foreign translation adjustments on the value of firms with homogeneous characteristics, and thus, increases the comparability and reliability of the data. The problem that the market incorporates different types of information (accounting information being just one type) into stock prices and that different types of information (good and bad news) affect stock prices of different industries differently can be avoided by focusing on one industry. The main disadvantage of a one-industry design is that it provides a relatively small sample.

Two periods of time are selected for the investigation. The first period, covering years from 1999 to 2003, is used to examine the effects of the foreign currency translation under the former accounting standard AASB 1012, and the second period, covering years from 2005 to 2010, is used to examine the effects under the new accounting standard AASB 121. The sample did not include the year 2004, as the stock prices of oil and gas firms in this period were significantly influenced by sharp increases in the oil price worldwide. In addition, some firms voluntarily started to apply the AASB 121 in 2004, which might reduce the validity of the intended comparison between the two periods. This paper intends to examine the correlations between the translation adjustment and the change in the firm value and compare the correlations between the two periods.

A total of 85 public companies that are listed on Australian Securities Exchange meet the selection criteria, as they are classified into the oil and gas sub-industry within the manufacturing sector and they have foreign subsidiaries and operate in more than one currency environment. Among them, however, only the 20 largest corporations that have subsidiaries in different countries for the period from 1999 to 2003 (100 observations) constitute a usable sample. Others are unusable due to various factors (such as, main activities being exploration and development without revenues being reported, etc.)\(^6\). Among the 20 corporations selected, only 15 of them are used for examining the second period from 2005 to 2010 due to the following reasons. Under AASB 121, a firm can choose Australian dollar, the US dollar, and other currencies to present its financial statements. If a firm’s functional currency is the same as the presentation currency, then, no translation will be required. Furthermore, as AASB 121 does not specify how equity should be translated, a firm may have no translation adjustment, if it uses the closing exchange rate to translate the equity accounts. As a result, five of the firms in the sample are unusable for the test of the second period.

Methodology

\(^6\) Some oil and gas companies applied the temporal translation method that was allowed under AASB 1012 and did not separately show the translation gain/loss of translation of foreign financial statements and the foreign currency transaction gain/loss. As a consequence, these companies were excluded from the sample used for the test, and only the companies applying the current rate method were included.
The objective of this paper is to test the association between foreign exchange adjustments resulted from the translation of foreign currency financial statements and changes in the firm value. The methodology for the “association approach” builds on the relationship between earnings and return initially introduced by Ball and Brown (1968). Louis (2003) extended the association approach to test the effects of the foreign translation adjustment on the firm value. Thus, Louis’ (2003) model investigated the association of the foreign translation adjustment with the change in the firm value through its association with the firm’s performance (earnings or net income). This paper adopts a model similar to Louis’ (2003) by including the net income variable and the translation adjustment variable.

A firm’s foreign exchange exposure may include both the translation exposure arising from foreign operations and the transaction exposure arising from the export and import. As Louis (2003) pointed out, the coefficient of the translation adjustment in the model might capture the effect of both types of foreign exchange exposure. In that case, any observed association with return may not necessarily and solely due to the economic effect of the translation adjustment. In addition, the effect of the translation adjustment is likely to be affected by the size of a firm’s foreign operations (Louis, 2003). To alleviate the potential biases due to the association between foreign exposure and the effects of the translation adjustment, foreign currency transaction gain and loss is also incorporated in the model as a control variable, which is similar to the model of Louis (2003). B. Soo and L. Soo (1994) also examined whether the market weighed the foreign translation gain and loss differently from the foreign transaction gain and loss.

A multiple regression model, as shown in Equation (1), is constructed to test the relationships among the reported net income, foreign translation adjustments, foreign transaction gain/loss, and the firm value.

\[
R_{i,t} = \beta_0 + \beta_1 NI_{i,t} + \beta_2 ADJ_{i,t} + \beta_3 TADJ_{i,t} + \epsilon_{i,t}
\]  

(1)

Where \( R_{i,t} \) is returns on investment (changes in the stock price), \( \beta_0 \) is a constant, \( NI_{i,t} \) is the net income, \( ADJ_{i,t} \) is the foreign translation adjustment (1999-2003) or foreign translation differences (2005-2010), and \( TADJ_{i,t} \) is the foreign currency transaction gain/loss.

A long interval regression technique which is similar to the one used by Hayn (1995) and Louis (2003) is applied. The reason for using this technique is that the market may not pay attention to a short-term change in exchange rates. Hence, this paper observes the change in the firm value and the translation adjustment and their correlations over a 5-year period.

In this paper, the authors are mainly interested in the relationships between variables included in the model, and in particular, the relationships between the translation adjustment and the firm value. The following relationships are hypothesized:

1. A negative association between the foreign translation adjustment and the change in the firm value under AASB 1012 (years from 1999 to 2003), but a positive one under AASB 121 (years from 2005 to 2010);
2. A positive association between the net income and the firm value;
3. A positive association between the transaction gain/loss and the firm value.

**Empirical Results**

The regression results are reported in Table 1. The overall models for both AASB 1012 and AASB 121 have achieved significant regression results, with \( F \)-statistics (20.566, \( p < 0.01 \)) and adjusted \( R^2 \) (0.572) for AASB 1012 and \( F \)-statistics (12.800, \( p < 0.01 \)) and adjusted \( R^2 \) (0.580) for AASB 121.
The main research interest of this paper is to investigate if a negative relationship exists between the foreign translation adjustment and the firm value under AASB 1012 and if this relationship changes to a positive one under AASB 121. The empirical results confirm the hypotheses. As shown in Table 1, foreign currency translation adjustments are negatively associated with changes in the stock price under AASB 1012 ($t = -3.942, p < 0.01$) and are positively associated with changes in the stock price under AASB 121 ($t = 1.950, p < 0.01$).

With respect to the net income variable, the results in Table 1 show that the net income is positively associated with changes in the stock price under both AASB 1012 ($t = 4.973, p < 0.01$) and AASB 121 ($t = 2.540, p < 0.01$) as hypothesized. This result demonstrates that the stock market incorporates firms’ earnings information in determining the stock price, which has been consistently confirmed by earnings studies documented in the literature. Foreign currency transaction gain/loss is positively (negatively) associated with changes in the stock price under both AASB 1012 ($t = 5.449, p < 0.01$) and AASB 121 ($t = 2.600, p < 0.01$) as hypothesized. This result is expected, as foreign currency transaction gain/loss has cash flow implications.

Table 1

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>AASB 1012 Expected sign</th>
<th>Actual sign</th>
<th>AASB 121 Expected sign</th>
<th>Actual sign</th>
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<tr>
<td>NI</td>
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<td>+</td>
<td>0.720</td>
<td>+</td>
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<td>t-statistic</td>
<td>4.973</td>
<td>+</td>
<td>2.540</td>
<td>+</td>
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<tr>
<td>p-value</td>
<td>0.000</td>
<td>+</td>
<td>0.000</td>
<td>+</td>
</tr>
<tr>
<td>ADJ</td>
<td>-0.403</td>
<td>-</td>
<td>0.320</td>
<td>-</td>
</tr>
<tr>
<td>t-statistic</td>
<td>-3.942</td>
<td>+</td>
<td>1.950</td>
<td>+</td>
</tr>
<tr>
<td>p-value</td>
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<td>+</td>
<td>0.000</td>
<td>+</td>
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<tr>
<td>TADJ</td>
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<td>0.402</td>
<td>+</td>
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<tr>
<td>t-statistic</td>
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<td>+</td>
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<tr>
<td>p-value</td>
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<td>+</td>
<td>0.005</td>
<td>+</td>
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<td>$R^2$</td>
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<td>0.619</td>
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<td>Adjusted $R^2$</td>
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<tr>
<td>$F$-statistic</td>
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<td>12.800</td>
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<td>$p$-value</td>
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</table>

Conclusions

This article reports an empirical study that examines the accounting and the economic effects of foreign exchange rate fluctuations on the oil and gas industry under the former and the current translation accounting standards in Australia. Having analyzed the effects of the exchange rate changes on the firm value (the economic effect), this paper then focuses on investigating the accounting effects of the rate changes resulted from the application of the translation accounting standards and correlating them to the firm value. By using Australia-based multinational oil and gas companies, the key finding of this paper is that foreign translation adjustments reported under AASB 1012 are inversely associated with the firm value and that this relationship changes to a positive one under AASB 121. Due to the unique economic characteristics of the oil and gas
industry, Australian oil and gas companies will likely benefit from the depreciation of foreign currencies, leading to an increase in the firm value. However, the depreciation of a foreign currency will result in a negative translation adjustment under AASB 1012, indicating a negative impact on the firm value. The finding of this inverse relationship between translation adjustments and the firm value found under AASB 1012 is consistent with that of prior studies using American samples (e.g., Louis, 2003; Pinto, 2005). However, under AASB 121, oil and gas companies are able to report translation adjustments that are consistent with the economic effects of foreign exchange rate changes. The result is likely due to the fact that AASB 121, by adopting the functional and presentation currency concepts and introducing the changes, provides firms with more flexibility in translation accounting practice and enables firms to measure and present foreign operations more effectively. Thus, AASB 121 has the potential to improve the quality of the translation accounting information. Based on the empirical results, this paper lends support to the new translation accounting standard.

This paper has the following limitations. The sample size used for the statistical test is relatively small, due to the small population of Australian oil and gas firms and the data unavailability of a number of firms. However, the sample used represents a high percentage of the population and includes all large and major firms of the Australian oil and gas industry.

References


